

Training directors gather at NIEHS

By Eddy Ball

Representatives of the 49 NIEHS-funded training grant programs met March 27-28 to learn about emerging trends in funding, workforce development, and diversity. The grants, awarded under the Ruth L. Kirschstein National Research Service Awards (NRSA), support training programs for graduate students and postdoctoral trainees. Also invited to attend were the directors of the three NIEHS short-term summer research programs for medical students, and the four directors of the short-term summer research programs for high school and undergraduate students.

Following a welcome from NIEHS Program Administrator [Carol Shreffler, Ph.D.](#), NIEHS and NTP Director Linda Birnbaum, Ph.D., addressed the critical role of training in the NIEHS strategic plan, developments in the budget process, and her one-NIEHS vision for advancing the environmental sciences.

Birnbaum was candid about the effects of budget cuts on grants. “The pay lines are going to drop,” she said. But Birnbaum was also eager to assure the training directors that the burden would fall evenly across all the programs NIEHS supports. “Intramural programs are also taking a hit,” she added.

Responding to Birnbaum’s enthusiasm for training successes and the deep commitment of NIEHS to training programs, several attendees, afterward, described her presentation as upbeat and reassuring.

Linked Video

[Watch the award-winning “These Are the Days of Our Lives... As Toxicologists” video that Birnbaum recognized during her presentation \(06:37\)](#)

New initiatives in training and diversity

Directors and representatives of new training programs reported on their operations and curriculum design, as well as efforts to enrich their programs with existing resources at their institutions. Each of the programs includes a proactive agenda for increasing the diversity of participants, and implementing innovative approaches to better prepare trainees for a changing job market.

These themes were developed even further in videocasts featuring representatives of NIH advisory committees to the director (ACDs) on the issues of [biomedical research workforce development](#) (<http://acd.od.nih.gov/bwf.htm>) and [diversity in the biomedical workforce](#) (<http://acd.od.nih.gov/dbr.htm>) (see [text box](#)). They also emerged in discussions of evaluation and future directions, later in the meeting.

Funding decisions — a view from the other side

In her report, NIEHS Division of Extramural Research and Training (DERT) Director [Gwen Collman, Ph.D.](#), quickly established an atmosphere of trust and shared interests, by helping attendees understand how DERT scientific administrators make their decisions. She presented a candid description of the



During her talk, Birnbaum referred to the centuries of expertise about training in the environmental health sciences, represented in the collective experiences of people at the meeting. (Photo courtesy of Steve McCaw)



University of Pennsylvania representative Trevor Penning, Ph.D., center, who described the good fit of the NIEHS program into the pipeline of training at his institution, continued the discussion with colleagues during a break in the meeting. (Photo courtesy of Steve McCaw)



Rebecca Fry, Ph.D., center, of the University of North Carolina at Chapel Hill, also took advantage of the break to catch up with colleagues from other programs — David Christiani, M.D., left, of Harvard University, and Daniel Liebler, Ph.D., of Vanderbilt University. (Photo courtesy of Steve McCaw)

difficult process of reviewing grant applications and setting funding priorities.

“We are so broad,” Collman explained, pointing to the range of programs that complicates decision-making by DERT staff. “We spend a lot of time arguing about these choices in-house,” she said.

In search of a fair and just way to recommend awards, and make the greatest number of awards with available funds, Collman said her staff must balance potentially high-impact proposals with consideration for ongoing programs that are making steady, if not headlines-grabbing, progress toward their objectives.

In an effort to maximize funds for awards and reduce travel expense, she added, “We’re trying to think about the future in terms of virtual collaborations.”

Defining and measuring success

On day two, DERT Program Evaluation Branch Chief [Christie Drew, Ph.D.](#), discussed her staff’s progress with CareerTrac, a structured database tool for following long-term training outcomes. As Shreffler said in her introduction of Drew, “We really don’t know a lot about where trainees are going.”

To address that uncertainty, Drew outlined a pilot system, established last year, to describe trainee outcomes, and offer training programs a measure of accountability, with a main focus on the past ten years. With nearly 7,000 NIEHS trainees loaded into the system, Drew’s team is continuing to solicit input for refining endpoints, such as scientific and technical emphasis codes, and employment sector and status classifications, with the goal of having data entry completed by September.

“I think for the first time, we’re really going to get some answers,” Drew concluded.

Attendees devoted the remaining half day of their meeting to discussions of the NIEHS training and workforce development strategic plan, in workgroups moderated by Shreffler and NIEHS Program Administrator [Michael Humble, Ph.D.](#) Program representatives considered undergraduate curriculum development and pipeline to graduate training, innovations in training at the graduate and postdoctoral level, curriculum and development research training programs in emerging scientific areas, and peer review for innovative programs.



Collman described what goes on behind the scenes when choosing grant applications. She assured her listeners, “I am really invested in your future.” (Photo courtesy of Steve McCaw)



Drew, shown at an earlier talk about CareerTrac, considered comments about tenure track designation as an endpoint for training evaluation. As this data entry item and several others demonstrated, classifying outcomes is not as easy as it may seem at first. (Photo courtesy of Steve McCaw)



New program representatives gathered as a panel to discuss new directions in training and tracking progress. Shown, left to right, are Christopher Simpson, Ph.D., of the University of Washington; Lauren Aleksunes, Pharm.D., Ph.D., of Rutgers University, who is also an Outstanding New Environmental Scientist awardee; and Marianne Wessling-Resnick, Ph.D., of Harvard University. (Photo courtesy of Steve McCaw)



Among the training directors with questions and comments about new directions in workforce development was Gary Miller, Ph.D., of Emory University. (Photo courtesy of Steve McCaw)



Thomas Gasiewicz, Ph.D., of the University of Rochester, joked about the trainee film from his program that received an award from the Society of Toxicology (SOT). "It was the only video in the competition," he said. (Photo courtesy of Steve McCaw)



During his review of a discussion about pipeline issues, Humble reflected on changes in training emphasis that are expected from ACD workforce recommendations. "It's really a big unknown," he said. (Photo courtesy of Steve McCaw)



Shreffler, who had the first word at the meeting, also closed the gathering with a hearty expression of her appreciation for attendees' input during the breakout sessions. (Photo courtesy of Steve McCaw)

Workforce training and support

NIH Director of Policy and Liaison Activities Henry Khachaturian, Ph.D., reviewed statistics about the current biomedical research workforce, before presenting ACD recommendations to advance NIH support for a future sustainable biomedical infrastructure.

Khachaturian pointed to the large upsurge in biomedical Ph.D.s, and long training times that complicate launching a traditional research career. Comparatively, low starting salaries, he said, contribute to making the biomedical research career less attractive, and current programs inadequately prepare trainees for anything other than an academic research career.

The recommendations address issues with graduate students, physician scientists, and staff scientists, but are especially pointed in terms of the postdoctoral experience, where training needs to be enhanced to better match available off-the-bench careers, where nearly one-third or more of trainees end up working.

Implementation of ACD recommendations, including an increase in trainee stipends and benefits, is progressing, Khachaturian explained, but the exact details and timing will still be undergoing review and clearance following the April 22 deadline for public comment.

Workforce diversity

NIH Extramural Program Scientific Workforce Diversity Specialist Lisa Evans, J.D., opened her presentation with two pie charts that painted a picture truly worth the proverbial thousand words. While the percentage of white principal investigators (PIs) receiving NIH research project grants (RPGs) is almost equal to the percentage of whites in the population, African-Americans, with 12.6 percent of the population, represent just 1.1 percent of PIs with RPGs. Latinos fare a little better, 16.3 versus 3.5 percent, while Native Americans, with 0.9 percent of the population, represent but a sliver of the RPG pie.

With recommendations from its working group, the ACD for workforce diversity has identified four interrelated approaches for addressing these glaring disparities, by increasing support for students through special awards to expand mentorship, and ensuring fairness in peer review through implicit bias and diversity awareness training. The recommendations call for recruitment of a permanent chief officer for scientific workforce diversity, to coordinate NIH initiatives and oversee rigorous prospective evaluation of existing NIH programs.

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